CLAIMS

1. A substrate for device bonding, comprising a substrate having an Au electrode layer formed on its surface, wherein (i) a layer composed of a platinum group element, (ii) a layer composed of at least one transition metal element selected from the group consisting of Ti, V, Cr and Co, (iii) a barrier metal layer composed of at least one metal selected from the group consisting of Ag, Cu and Ni and (iv) a solder layer composed of a solder containing Sn or In as a main component are laminated in this order on the Au electrode layer.

2. The substrate for device bonding as claimed in claim 1, wherein the solder layer (iv) is composed of a solder containing Sn or In as a main component and having an Au content of less than 20% by weight.

3. The substrate for device bonding as claimed in claim 1 or 2, wherein the substrate having an Au electrode layer on its surface is a metallized substrate in which a first undercoating metal layer containing Ti as a main component, a second undercoating metal layer containing Pt as a main component and an electrode layer

composed of Au are laminated in this order on a ceramic substrate containing aluminum nitride as a main component.

4. A process for producing a substrate for device bonding, comprising forming (i) a layer composed of a platinum group element, (ii) a layer composed of at least one transition metal element selected from the group consisting of Ti, V, Cr and Co, (iii) a barrier metal layer composed of at least one metal selected from the group consisting of Ag, Cu and Ni and (iv) a solder layer composed of a solder containing Sn or In as a main component in this order on an Au electrode layer which is formed on a surface of a substrate.

5. The process for producing a substrate for device bonding as claimed in claim 4, wherein the solder layer (iv) is composed of a solder containing Sn or In as a main component and having an Au content of less than 20% by weight.

6. A substrate for device bonding, which is produced by the process of claim 4 or 5.

7. A process for producing a device-bonded substrate, comprising placing a device with an electrode on the solder layer of the substrate for device bonding of claim 1 in such a manner that the electrode is brought into contact with the solder layer and then reflow soldering is applied to the device.

8. A device-bonded substrate, which is produced by the process of claim 7.